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Cc: Environmental Specialist <mwilson@co.slo.ca.us>, Planning Commissioner <jim@jimirving.com>, Planning Commissioner <ktopping@calpoly.edu>, Planning Commissioner <frenchbicycles@gmail.com>, Planning Coordinator <elcarroll@co.slo.ca.us>, Planning Assistant <rhedges@co.slo.ca.us>, Supervisor <cray@co.slo.ca.us>, Supervisor <bgibson@co.slo.ca.us>, Supervisor <ahill@co.slo.ca.us>, Supervisor <darnold@co.slo.ca.us>, Supervisor <fmecham@co.slo.ca.us>, "Board of Supervisors, general address" <boardofsups@co.slo.ca.us>
Date: 11/24/2014 02:29 PM
Subject: Comment on the Phillips 66 Santa Maria Refinery Rail Spur Project

24 November 2014
Mr. Murry Wilson
SLO Planning Department

Dear Mr. Wilson;

I write to comment on the Recirculated Environmental Impact report for the Santa Maria Refinery Rail Spur Project that proposes to bring daily a second high hazard flammable oil train through Davis, California. The railroad passing through Davis bisects the heart of the town. A rail disaster here like the one that occurred in Lac Megantic Quebec would be devastating to our city. It is not too strong to say it might destroy the city as we know it.

In the face of this unprecedented risk to our city, it is essential that the infrastructure is designed to expose us to as small risk as possible to our lives and property. Bakken crude is like a bomb: one hundred cars a day of bomb-like oil passing through through our town each day.

I believe the DEIR for the project fails to accurately account for this risk, not only to Davis but also to other cities along the route through which these high hazard flammable trains will pass. The DEIR employs an apparently flawed (even to the most naive observer) analysis and concludes that the probability of accidental release of crude oil from a train will occur only once in more than a hundred years. This is ridiculous. If this were the case then it would not be true that in 2013 alone, oil trains spilled more than a million gallons of crude oil, nearly twice as much as in the last forty years combined. In other words, this rosy accident scenario is already disproved by accidents that have already occurred and are occurring as we speak. HUM-01

Please insure that the EIR contains an accident probability assessment that is real, not one cooked up by parties with obvious financial conflicts of interest.

Yours truly,

Mont Hubbard
Professor Emeritus
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Get real.! Someone with an actual accident prediction expertise needs to analyze this, not the oil companies and railroads who have an obvious confl;ict of interest. The DEIR employs a flawed quantitative analysis to conclude that the probability of an accidental release of crude oil from a train is only one in 111 years. HUM-02

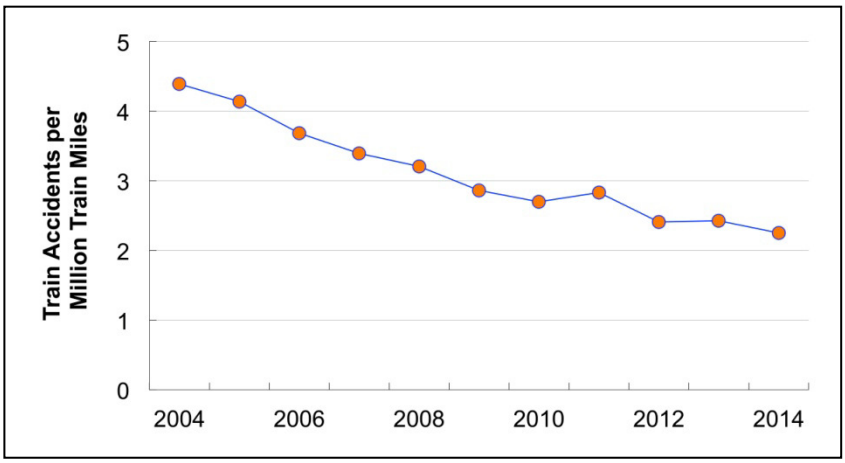
In the face of this unprecedented risk, it is important that the infrastructure and facilities transporting and processing these feedstocks are specifically designed to present minimal risk to life, public and private property, and the environment. In particular, officials entrusted with protecting public health and safety must ensure that the hazards from these projects are fully and accurately assessed, and the identified risks are mitigated to the fullest extent possible by law. HUM-03

HUM-01	A Quantitative Risk Analysis (QRA) was conducted as part of the RDEIR and is documented in the Hazards and Hazardous Materials Section (see Section 4.7 and Appendix H). The rail routes were divided up into distinct segments to account for differing population levels along the rail routes. Each segment was assigned a population density reflecting the unique populations along the rail route. Segments where facilities and/or events might attract temporary high population levels were assigned a population that reflected the larger temporary population, and did not correct for seasonal or diurnal variation, thus slightly overestimating the risk for the segment. The fact that every possible landmark along the proposed rail routes is not explicitly mentioned does not mean that it was omitted. The population assigned for each segment characterizes the potential residential, commercial, industrial, and venue population that is, or could be temporarily, present along the segment. The historical accidental data used in the RDEIR is not limited to trains shipping crude oil in recent years, but the long term historical train accident data for all freight. The use of data from all freight train movements nationwide provides a very robust database for estimating rail accidents and derailments. Average U.S. train derailment rates over the 5-year period 2005 – 2009 have previously been estimated using data from the U.S. Department of Transportation, Federal Railroad Administration (FRA) Rail Equipment Accident (REA) database combined with traffic data from the rail industry (Liu et al, 2014). This dataset was used to develop detailed derailment rates as a function of three factors: FRA Track Class, traffic volume (which appears to be correlated with additional maintenance above basic federal requirements) and Method of Operation (i.e., signaled or non-signaled trackage). All three of these factors have a significant effect on freight train derailment rate. These factors were used to calculate segment-specific derailment rates thereby enabling a fine grained calculation of derailment probability for any particular route. As discussed below, the overall accident rate has declined since this data was recorded and analyzed, thereby resulting in an overestimate of the present-day risk, and future risk. For example the average accident rate for the five-year period 2010-2014 was 27% lower than the average for the five-year period from 2005-2009, and the preliminary estimate of the accident rate for 2014 was 35% lower than the five-year period from 2010-2014. The reason data from 2005-2009 was used is because that dataset contained additional information that allowed for the estimated effect of FRA Track Class, Traffic Density and Method of Operation (Signaled or Unsignaled) on derailment rate. This additional granularity is needed for more precise segment-specific accident rate used in the analysis. The derailment rates calculated were based on 1,420 Class 1 railroad mainline derailments. Inclusion of a few more crude oil train derailments in recent years would have virtually no effect on the estimated rates. The suggestion that because these recent accidents were not included in our dataset somehow

invalidates the results reflects a lack of understanding of the analytical technique and how it was used. The data needed for this analysis are less complete than for overall accident rate but all other things being equal, there is no reason to believe that crude oil trains derail at a rate different than other freight trains. Using what data are available and making certain assumptions, the EIR consultant conducted an analysis in 2014 and observed no significant difference in the derailment rate for crude oil trains then for other freight trains.

The railroad accident rate has been steadily trending downward for over a decade. The accident rates in the past few years were the lowest since the FRA started recording the data in the mid-1970s. In the period from 2004 to 2014 the rate declined by 49% (almost half) (see Figure 1 below). Most derailments receive little or no attention from the public or media. Railroads are required by regulation to report all accidents that exceed a certain monetary threshold in damage to track, signals and rolling stock (currently $9,600). Proper estimation of train accident rates involves analysis of all accidents, divided by the total amount of traffic. The reason that some perceive an increase in the railroad petroleum crude oil accident rate is because of the more than 50-fold increase in this traffic since 2009. Estimates are that 233,698 tank cars of crude oil were moved by rail in 2012. This increased to over 435,000 tank cars moved by rail in 2013 (the full year of data is not yet available for 2014). With this increase in crude by rail traffic, the derailment and spill probability data would suggest that multiple crude by rail accidents would happen each year.

Figure 1. Railroad Accident Rate 2004 – 2014



Data Source: US DOT Federal Railroad Administration http://safetydata.fra.dot.gov/officeofsafety/publicsite/summary.aspx

(Data for 2014 include January through November)

Using the accident and spill probability data from the RDEIR the DEIR would have estimated that between 2012 and 2013 there would have been two to five derailments that had spills of 100 gallons or more in the U.S. Based upon the

	United States Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) incident data base, there were three crude oil train derailments with spills of 100 gallons or more. This does not contain the accident and spills that have occurred in Canada over this period since the accident and spill probability data is for mainline rails within the United States only. The methodology for estimating crude oil unit train accidents and spill probabilities is also consistent with the methodology outlined by the American Institute of Chemical Engineers, Center for Chemical Process Safety (AIChE CCPS) document Guidelines for Chemical Transportation Risk Analysis (CCPS, 1995), which is the definitive reference on the methodology for estimating hazardous materials transportation risk. The rail accident and failure rate analysis was conducted by experts at the Rail Transportation and Engineering Center (RailTEC), Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign. Staff involved included Christopher P.L. Barkan, Ph.D., Professor and Executive Director, M. Rapik Saat, Ph.D., Research Assistant Professor and Xiang Liu, Ph.D., Postdoctoral Research Associate.
HUM-02	The accident and release probability analysis was done by Dr. Christopher P.L. Barkan, PhD, who is a Professor at the University of Illinois at Urbana-Champaign, and is the George Krambles Faculty Fellow, and Executive Director - Rail Transportation and Engineering Center – RailTEC. Dr. Barkan is considered one of the world experts on rail accident rate assessments. The work done for the RDEIR was not done by Phillips 66 or the railroads. See Response to HUM-01.
HUM-03	The RDEIR contains a considerable amount of mitigation that may be within the jurisdiction of San Luis Obispo to require prior to project operations that address the potential for accidents, oil spills and emergency response. These include: Class I Impact HM.2 The potential for a crude oil unit train derailment would increase the risk to the public in the vicinity of the UPRR right-of-way. 1. HM-2a Only rail cars designed to FRA, July 23, 2014 Proposed Rulemaking Option 1: PHMSA and FRA Designed Tank Car as listed in Table 4.7.8, shall be allowed to unload crude oil at the Santa Maria Refinery. 2. HM-2b For crude oil shipments via rail to the SMR a rail transportation route analysis shall be conducted annually. The rail transportation route

	analysis shall be prepared following the requirements in 49 CFR 172.820. The route with the lowest level of safety and security risk shall be used to transport the crude oil to the Santa Maria Refinery. 3. HM-2c The Applicant's contract with UPRR, shall include a provision to require that Positive Train Control (PTC) be in place for all mainline rail routes in California that could be used for transporting crude oil to the SMR. 4. HM-2d The refinery shall not accept or unload at the rail unloading facility any crude oil or petroleum product with an API Gravity of 30° or greater. Class I Impact PS.4 Operations of the crude oil train on the mainline UPRR tracks would increase demand for fire protection and emergency response services along the rail routes. 1. PS-4a As part of the Applicant's contract with UPRR, it shall require that quarterly hazardous commodity flow information documents are provided to all first response agencies along the mainline rail routes within California that could be used by trains carrying crude oil to the Santa Maria Refinery for the life of the project. Only first response agencies that are able to receive security sensitive information as identified pursuant to Section 15.5 of Part 15 of Title 49 of the Code of Federal Regulations, shall be provided this information. This contract provision shall be in place and verified by the County Department of Planning and Building prior to delivery of crude by rail to the Santa Maria Refinery. 2. PS-4b Only rail cars designed to FRA, July 23, 2014 Proposed Rulemaking Option 1: PHMSA and FRA Designed Tank Car shall be allowed to unload crude oil at the Santa Maria Refinery. PS-4c As part of the Applicant's contract with UPRR, it shall require annual funding for first response agencies along the mainline rail routes within California that could be used by the trains carrying crude oil to the Santa Maria Refinery to attend certified offsite training for emergency responders to railcar emergencies, such as the 40 hour course offered by Security and Emergency Response Training Center Railroad Incident Coordination and Safety (RICS) meeting Department of Homeland security, NIIMS, OSHA 29CFR 1910.120 compliance. The contract shall require funding of a minimum of 20 annual slots per year for the life of the project. This contract provision shall be in place and verified by the Cal Fire/County Fire prior to delivery of crude by rail to the Santa Maria Refinery. 3. PS-4d As part of the Applicant's contract with UPRR, it shall require

	annual emergency responses scenario/field based training including Emergency Operations Center Training activations with local emergency response agencies along the mainline rail routes within California that could be used by the crude oil trains traveling to the Santa Maria Refinery for the life of the project. A total of four training sessions shall be conducted per year at various locations along the rail routes. This contract provision shall be in place and verified by the Cal Fire/County Fire prior to delivery of crude by rail to the Santa Maria Refinery. 4. PS-4e As part of the Applicant's contract with UPRR, it shall require that all first response agencies along the mainline rail routes within California that could be used by trains carrying crude oil traveling to the Santa Maria Refinery be provided with a contact number that can provide realtime information in the event of an oil train derailment or accident. The information that would need to be provided would include, but not be limited to crude oil shipping papers that detail the type of crude oil, and information that can assist in the safe containment and removal of any crude oil spill. This contract provision shall be in place and verified by the Cal Fire/County Fire prior to delivery of crude by rail to the Santa Maria Refinery. Class II Impact PS.3 The Rail Spur Project would increase demand for fire protection and emergency response services at the SMR. 1. PS-3A Prior to issuance of construction permits, the Applicant shall submit to Cal Fire/County Fire for review and approval a final Fire Protection Plan for the Rail Spur Project that meets all the applicable requirements of API, NFPA, UFC, and Cal Fire/County Fire. 2. PS-3b Prior to notice to proceed for the rail unloading facility, the Applicant shall update the SMR Emergency Response Plan to include the rail unloading facilities and operations. 3. PS-3c Prior to notice to proceed for the rail unloading facility, the Applicant shall update the existing SMR Spill Prevention Control and countermeasure Plan to include the rail unloading facilities and operations. 4. PS-3d Prior to notice to proceed for the rail unloading facilities, the Applicant shall assure that the existing SMR fire brigade meets all the requirements outlined in Occupational Safety and Health Administration 29 CFR 1910.156, and NFPA 600 & 1081. 5. PS-3e Prior to issuance of grading permits, the Applicant shall have an executed operational Memorandum of Understanding (MOU) with Cal Fire/County Fire that includes fire brigade staffing/training requirements

	and Cal Fire/County Fire funding requirements. This MOU shall be reviewed and updated annually by Cal Fire and the Applicant. 6. PS-3f Prior to issuance of grading permits, the Applicant shall have an agreement to reimburse Cal Fire/County Fire for time spent by a qualified fire inspector to conduct the annual fire inspections at the SMR including all structures, and support facilities consistent with Cal Fire/County Fire's authority and jurisdiction. The Applicant shall reimburse all costs associated with travel time, inspections, inspection training, and documentation completion. The reimbursement rate shall be according to the most recent fee schedule adopted by the San Luis County Board of Supervisors. 7. PS-3g Prior to issuance of grading permits, the Applicant shall have an agreement to reimburse Cal Fire/County Fire for offsite training for emergency responders to railcar emergencies, such as the 40 hour course offered by Security and Emergency Response Training Center Railroad Incident Coordination and Safety (RICS) meeting Department of Homeland security, NIIMS, OSHA 29CFR 1910.120 compliance. Initial training shall be two members of the Interagency Hazardous materials Response Team, two members of the interagency Urban Search and Rescue Team, and two members annually from Cal Fire/County Fire or fire districts in San Luis Obispo that have automatic aid agreements with Cal Fire/County Fire for a total of six slots per year for the life of the project. 8. PS-3h Prior to issuance of grading permits, the Applicant shall have an agreement to reimburse Cal Fire/County Fire for Fire Chief Officer attendance such as the 40 hour course offered by Security and Emergency Response Training Center; Leadership & Management of Surface Transportation Incidents. Funding shall be for two Fire Chief Officers annually for the life of the project. 9. PS-3i Prior to issuance of grading permits, the Applicant shall have an agreement with Cal Fire/County Fire to conduct annual emergency response scenario/field based training including Emergency Operations Center Training activations with the Applicant, Cal Fire/County Fire, UPRR, and other San Luis Obispo County First response agencies that have mutual aid agreements with Cal Fire/County Fire. These annual emergency response drills shall occur for the life of the project.